



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

REFORM OF THE CALENDAR

The recent premature announcement that a conference of astronomers will be held in Rome next April, under the presidency of Cardinal Mercier, with the object of reforming the calendar, interests students of History, as Chronology is termed "one of the two eyes of history." There are two general branches in the science of Chronology—*Mathematical* (Theoretical, Astronomical) and *Historical* (Technical). Up to comparatively recent times Chronology was a confused mass of systems and methods of computing time. The year was begun, for example, in different parts of Europe on January 1 (*Style of the Circumcision*); March 1 (*Style of Venice*); March 21 or 22 (*Style of the Vernal Equinox*); March 25 (*Style of the Annunciation*); August 11 (*Style of Denmark*); September 21 or 22 (*Style of the Autumnal Equinox*); December 25 (*Style of the Nativity*); Easter (*Style of France*). There were also, under the Julian Calendar, the divisions of the month into *Kalends*, *Nones*, and *Ides*; and the much-used *Indictions*—a relic of the days of the Roman Empire, when the year was divided into units of fifteen for the purpose of the revising of the collection of taxes. These various modes of beginning the year caused the confusion which would still be resting on the science of Technical Chronology, were it not for the great classic of the Benedictines of France—*L'Art de Vérifier les Dates*—which was begun under the direction of Dom Maur d'Antine, and published in Paris in 1740. Dom Francis Clement revised the work and published subsequent editions in 1770, and in 1783-87. A fourth edition was published by Saint-Allais between 1818 and 1844, in two separate forms; one in forty-four volumes *octavo*, and the other in eleven volumes *folio*. One of the first scholars to attempt a reform of this science was Joseph Scaliger, in his *De Emendatione Temporum* (Paris, 1583). In 1627 Petavius published his studies: *De Doctrina Temporum* (Paris, 1617) and *Rationarium Temporum* (Paris, 1633). The most complete Manual on Chronology is that of C. Ludwig Ideler, *Handbuch der Mathematischen und Technischen Chronologie*. (two volumes, Berlin, 1825-26), of which a short compendium exists: *Lehrbuch der Chronologie* (Berlin, 1831). Other works on this subject are: Arbuthnot, *The Mysteries of Chronology* (London, 1900); Blair, *Chronological Tables* (New York, 1888); Bond, *Handy Book of Rules and Tables for Verifying Dates with the Christian Era* (London, 1875); Carreresi, *Cronografia generale dell'era volgare dall'anno I all'anno 2000* (Florence, 1875); R. Chambers, *The Book of Days, a Miscellany of Popular Antiquities in Connection with the Calendar, including Anecdote, Biography, and History, Curiosities of Literature, and Oddities of Human Life* (Edinburgh, 1888, two volumes); Gams, *Series Episcoporum Ecclesiae Catholicae* (Ratisbon, 1873); Grotefend, *Zeitrechnung des deutschen Mittelalters und der Neuzeit* (Hanover, 1891); *Handbuch der historischen Chronologie* (Hanover, 1874); Hales, *A new Analysis of Chronology and Geography, History and Prophecy, etc., etc.* (London, 1830. 4 vols., 2d ed.); Haydn, *Dictionary of Dates* (New York, 1883, 17th ed, up to autumn of 1881); MacDonald, *Chronologies and Cal-*

endars (London, 1897); Nichol, *Tables of European History, Literature, Science and Art, from 200 to 1888, and of American History, Literature and Art* (Glasgow, 1888); Joao Pedro Ribeiro, *Dissertação sobre las Datas dos Documentos e Monumentos de Hispanha e especialmente de Portugal* (Lisbon, 1810-35, 2 vols.); Spanheim-Wright, *Ecclesiastical Annals* (Cambridge, 1820); Weingarten, *Zeittafeln und Ueberblicke zur Kirchengeschichte* (Leipzig, 1891).

Ideler says in the Preface of his *Handbuch*: "We see the sun rise in the morning; we see it reach its full zenith at midday, and withdraw itself from our sight in the evening, and during the time of its 'coming and going' we have been living through parts of the day, month, year, and era, as humanity has done since the beginning of creation." Another author says that there are few subjects of an erudite nature of greater utility to the historian and at the same time fraught with thornier difficulties than that of Technical Chronology.

For the most important units furnished by natural phenomena we have the division of time into the *Day* and the *Year*. The *Day* is the interval between two successive passages of the sun across the meridian of any place, and is commonly computed from the midnight passage across the inferior meridian on the opposite side of the globe; but by astronomers, from the passage at the noon following. The *Civil Day* is thus twelve days in advance of the *Astronomical*. The *Solar Day*, which is what we mean by the term *day*, is longer by about four minutes of time than the *Sidereal*, or the successive passages of a fixed star across the same meridian; for, owing to the revolution of the earth in its orbit from west to east, the sun appears to travel annually in a path (the ecliptic), likewise from east to west, among the stars around the entire heavens. The belt of constellations through which it appears to pass is styled the *Zodiac*. The *Year* (Tropical Year) is the period in which the sun makes a complete circuit of the heavens and returns to the point in the zodiac whence it started, and the problem to be solved by those who construct calendars is to find the exact measure of this yearly period in terms of days, for the number of these occupied by the sun's annual journey is not exact.

The first attempt to find a practical solution of this problem was made by Julius Caesar, who introduced the Julian Calendar. With the assistance of the astronomers of Alexandria, he determined the true length of the year to be 365 days and six hours, or a quarter of a day. From this it followed that the reckoning of the civil year began too soon, *i. e.*, six hours before the sun had reached the point whence it started its annual cycle. In four years, therefore, the year would begin an entire day too soon. To remedy this Caesar instituted leap-years, a 366th day being introduced every fourth year, to cover the fractional portions of a day thus accumulated. The extra day was assigned to February, the 24th and 25th day of which were styled in leap-year the *sixth* before the Kalends (or first) of March. Hence the name *Bissextile* given to these years.

Caesar's reform, which was introduced in the year 46 B. C., or the 708th from the founding of Rome, would have been perfect had the calculation on which it was based been accurate. In reality, however, the portion of the day to be dealt with, over and above the complete 365, is not

quite six hours, but 11 minutes and 14 seconds less. To add a day every fourth year was consequently almost three-quarters of an hour too much, the following year commencing 44 minutes and 52 seconds after the sun had passed the equinox. At the end of a century these accumulated errors amounted to three-quarters of a day, at the end of four centuries to three entire days.

The practical inconveniences of this defect in the system were not slow in making themselves felt, the more so as, Caesar being murdered soon after (44 B. C.), leap-year, by a misunderstanding of his plan, occurred every third year instead of every fourth. At the time of the Julian reform the sun passed the vernal equinox on March 25, but by the time of the Council of Nicea (A. D. 325) this had been changed for the 21st, which was then fixed upon as the proper day of the equinox—a date of great importance for the calculation of Easter, and therefore of all the movable feasts throughout the year.

The Julian Calendar (which is still in force in Russia) had a long inings, but it was subject to capricious change even at a very early period. He had ordered that January, March, May, July, September, and November should have each 31 days, and the others 30, except February, which was to have 29, except in leap-year when it also was to have 30 days. Augustus Caesar noted with displeasure that while the month called after Julius (July) had 31 days, his own name month (August) had one day less. A day was accordingly taken from February and given to August, and in order that three months of 31 days might not come together, September and November were reduced to 30 days, and October and December promoted to 31. So, by the whim of Augustus, we still measure the year.

The error in the Julian Calendar, of course, continued to operate and disturb ecclesiastical calculations. In the thirteenth century the year was seven days behind the Nicæan computation. By the sixteenth it was ten days in arrear, so that the vernal equinox fell on March 11, and the autumnal on September 11; the shortest day was December 11, and the longest June 11, the feast of St. Barnabas, whence the old English rhyme:

“Barnaby bright, the longest day and the shortest night.”

Such an error was too obvious to be ignored, and throughout the Middle Ages many observers pointed it out and endeavored to devise a remedy. The necessity of reform in the Calendar was continually urged, especially by Church authorities; and it was strongly pressed upon the attention of the Pope by the Councils of Constance, Basle, and Lateran (A. D. 1511), and finally by the Council of Trent, in its last session (A. D. 1563).

Nineteen years later the work was accomplished by Pope Gregory XIII, and the reform, known as *New Style* (often abbreviated to N. S.), was inaugurated by the Bull *Inter gravissimas pastorales officii nostri curas* (February 29, 1582). This change gives the name of *Gregorian Calendar* to the reformed method of time-calculation. To effect this, ten days were omitted from the Calendar then in vogue. To obviate the recurrence of former inconveniences it was decided to omit three leap-years in every four centuries, and thus eliminate the three superfluous days, which, as we have noted, would be introduced under the Julian system. To effect this, only

those *centurial* years were retained as leap-years the first two figures of which are exact multiples of 4—such as 1600, 2000, 2400 (other centurial years, 1700, 1800, 2100, etc., being common years of 365 days each). By this comparatively simple device an approximation to perfect accuracy was effected, which for all practical purposes is amply sufficient; for, although the length of the Gregorian year exceeds the true astronomical measurement by twenty-six seconds, it will be about thirty-five centuries before the result will equal the error of a day.

The Gregorian Calendar, or *New Style*, was adopted in Denmark, France, Spain, Portugal, Italy (not wholly, however), Holland, and the greater part of Belgium and Lorraine in 1582; in Germany and Switzerland the Catholic provinces adopted it in 1584, the Protestant provinces only in 1700. It was adopted in Poland in 1586; in Hungary in 1587; in Tuscany in 1749, and in Great Britain and Ireland in 1752. Its adoption in Great Britain caused a serious agitation against "Popery" which found expression in the slogan "Give us back our eleven days"; and the Act of Parliament which initiated the *New Style* was the subject of acrimonious debate in the House of Commons. In the *Gentleman's Magazine* (September, 1752), a writer says:

I write to you in the greatest perplexity; I desire you'll find some way of getting my affairs to rights, or I believe I shall run mad, and break my heart into the bargain. How is all this? I went to bed last night, it was Wednesday, September 2, and the first thing I cast my eye upon this morning, at the top of your paper, was Thursday, September 14. I did not go to bed till between one and two. Have I slept away 11 days in seven hours, or how is it? For my part I don't find I'm any more refreshed than after a common night's sleep. . . . One thing, however, I can assure you has surprised me very much, that His Majesty should consent to it, since he is plainly robbed by it of eleven days out of the time he was to spend in his *German* dominions; but he is a patriot prince, and there is nothing he will refuse that is for the good of his people. The next exploit of our superiors will be the annihilation of space, and then the compliment is returned and *Hanover* and *London* will lie together.

American students of History should note carefully the discrepancy resulting from the time-computation made at London and Rome—our chief ecclesiastical centers before the organization of the American Hierarchy. The usual example of this discrepancy is the date of Queen Elizabeth's death. This occurred in what was then styled in England March 24, 1602, being the last day of the legal year. On the Continent, and wherever the *New Style* prevailed, this day was April 3, 1603. To avoid ambiguity, historical students frequently express this difference ^{March 24}_{April 3}, 1602²₃. Our history books have modernized all these dates; but with the history of the Catholic Church of America, which in large part remains to be written, the research-worker must proceed with the strictest caution, if the sequence of cause and effect is to be kept unbroken in his narrative. Not only must the difference of ten days be reckoned in Irish and British history before 1752, but the two "New Year's" days of January 1 (the historical year),

and of March 25 (the civil, ecclesiastical and legal year), must be kept separate. For example, the execution of Charles I, according to one system, is January 30, 1648; according to another, January 30, 1649.

The fixing of a regular date for the observance of Easter was the subject of a bill introduced by Lord Desborough in the House of Lords some months ago. It evoked considerable discussion in the press and among Catholic prelates in England. One of the most distinguished members of the English Hierarchy, Bishop Casartelli, of Salford, who speaks with the weight of Catholic scholarship behind him, said of Lord Desborough's bill:

The Holy Father, by a stroke of the pen, could make the reform we advocate at once. No longer is any dogmatic or disciplinary question involved. The process for us Catholics seems to me simplicity itself.

If we take an ordinary Missal, or else the Breviary which the priest uses in saying his divine office, we shall find that in what we may call a "normal year" there are six Sundays with their weeks after Epiphany—that is, between Epiphany and Septuagesima—and twenty-four Sundays and weeks after Pentecost—that is, between Whit-week and Advent. Now all the Holy See would need to do would be to issue a decree that in future all years should be "normal years," that is, with the Sundays and weeks as in the Missal. What could be easier?

Of course, if the Holy See alone took this step all Catholics would at once obey; but unless the Civil Powers agreed to the alteration, we should be in a state of confusion, as the civil and ecclesiastical Easters would differ.

Similarly, if Lord Desborough's bill became law in this country, and the other nations followed suit, unless the Holy See accepted the change a like confusion would follow. Hence, what would be absolutely necessary is some friendly negotiation between the Vatican and the Civil Powers. It matters little which takes the first step, so long as that step is taken.

This question was again mooted in the House of Lords on November 8 by Lord Desborough, who asked about the result of communications with the Holy See on the subject. In reply the Earl of Onslow, Parliamentary Secretary to the Ministry of Health, stated that the High Commissioner at Constantinople reported that the Holy Synod had discussed the subject, and decided that they were not competent to deal with it. Count de Salis, the British representative at the Vatican, reported that he had been informed that it was felt, as far as the Catholic Church was concerned, there was insufficient ground for changing the present system. Furthermore, that as regards the conference which, according to press reports, had been appointed to inquire into the question, nothing was known at the Vatican.